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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/822,689	04/13/2004	Jun Kamada	01-51400	2895
79326	7590	03/03/2011		
Fujitsu Patent Center Fujitsu Management Services of America, Inc. 2318 Mill Road, Suite 1010 Alexandria, VA 22314			EXAMINER ZECHER, CORDELLA P K	
			ART UNIT 2432	PAPER NUMBER
			NOTIFICATION DATE 03/03/2011	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

## Application No.

10/822,689

## Applicant(s)

KAMADA ET AL.

## Examiner

Cordelia Zecher

## Art Unit

2432

**Period for Reply**  
-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-22, 24-33, 35 and 36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 18, 20-22, 24, 26-29, 31-33, 35 is/are rejected.
- 7) ☒ Claim(s) 19, 25, 30 and 36 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments filed November 15, 2010 have been fully considered but they are not persuasive.
2. Applicant argues that Ellison fails to teach refining the resources to an accessible set of resources, and determining whether the necessary resource is included or not in the accessible set of resources. However, Ellison teaches that each ring includes a logical division of hardware and software components (column 3, lines 64-column 4, line 2) and verifying and loading a particular ring (column 4, lines 63-65). Therefore a particular set of resources are only able to be accessed when the particular ring is loaded. Ellison also teaches an isolation area that is only accessible to elements of the operating system operating in isolated execution mode (column 5, lines 38-40), in which normal execution rings 0 and 3 cannot access the isolated area (column 5, lines 46-48). Therefore, if normal execution rings 0 and 3 were to request access to the isolated area, the isolated area would not be included in the accessible set of resources and access would be denied, or if the rings requested access to access a non-isolated area, the area would be included in the accessible set of resources and access would be granted.
3. Ellison also teaches normal execution ring 0 can access both the OS pages and the application pages, while ring 3 can only access the application pages (column 5, lines 42-46). Therefore, if ring 3 requested access to the OS pages, the access would be denied since it is not included in the accessible set of resources, but if access was requested to the application pages, then access would be granted.

4. Therefore Ellison teaches determining whether the necessary resource is included or not in the accessible set of resources.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 17 – 22, and 24 – 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. According to the current USPTO policy regarding 112 6<sup>th</sup> paragraph “means plus function”, claim limitations that are recited in functional language and have no structure recited either as part of the name of the element or in the recitation of the functionality, raise an issue as to whether the claim is in “means plus function” language or not. In this case, the retaining unit, determining unit and the access control unit neither in the name itself nor the functional language denotes any structure. Therefore there is a question as to whether this claim entails means plus function even though it doesn't use the “means for” language.
7. If applicant wishes to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to:

(a) Amend the claim to include the phrase “means for” or “step for” in accordance with these guidelines: the phrase “means for” or “step for” must be modified by functional language and the phrase must **not** be modified by sufficient structure, material, or acts for performing the claimed function; or

(b) Show that the claim limitation is written as a function to be performed and the claim does **not** recite sufficient structure, material, or acts for performing the claimed function which would preclude application of 35 U.S.C. 112, sixth paragraph. For more information, see MPEP 2181.

8. For a computer-implemented means-plus-function claim limitation that invokes 35 U.S.C. 112, sixth paragraph, the corresponding structure is required to be more than simply a general purpose computer or microprocessor. The corresponding structure for a computer-implemented function must include the algorithm as well as the general purpose computer or microprocessor.

***Claim Rejections - 35 USC § 101***

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 28 – 33, 35 and 36 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. See MPEP 2111.01. On page 65 of applicant's specification, applicant defines the recording medium to include transmission media. When the broadest reasonable interpretation of a claim covers a signal *per se*, the claim must be rejected under 35 U.S.C. §101 as covering non-statutory subject matter. See *In re Nuijten*, 500 F.3d 1346, 1356-57 (Fed. Cir. 2007) (transitory embodiments are not direct to statutory subject matter) and *Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S.C §101*, Aug. 24, 2009; p. 2. A claim drawn to such a computer readable medium that covers

both transitory and non-transitory embodiments may be amended to narrow the claim to cover only statutory embodiments to avoid a rejection under 35 U.S.C. § 101 by adding the limitation "non-transitory" to the claim.

11. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

***Claim Rejections - 35 USC § 103***

12. Claims 17, 18, 20, 24, 25, 27 – 29, 31, 35, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keller, and further in view of Ellison et al's US Patent 6,507,904. Referring to claims 17, 27 and 28, Keller teaches a central processing unit (CPU) (column 5, lines 49-53) comprising:

- a. An input unit in the CPU to input a command that is executed by using a firmware or a logic circuit (column 27, lines 9-11).
- b. A storing unit in the CPU to store a plurality of operation modes and a plurality of commands, each one of the modes corresponding to a different set of commands (column 33, lines 9-13).
- c. A retaining unit in the CPU to retain a plurality of sets of resources to be used with the firmware or logic circuit (column 22, lines 45-49).
- d. A determining unit in the CPU to determine whether the input command is included or not in the set of commands corresponding to a current operation mode (column 27, lines 19-23).

- e. An execution unit in the CPU to acquire resources from the access control unit (column 27, lines 34-37) and to execute the input command by using the firmware or the logic circuit, when the input command is included in the set of commands corresponding to the current operation mode (column 27, lines 17-21).
13. Keller does not explicitly disclose:
- f. A different set of the resources being available when each one of the operation modes is set, or
  - g. An access control unit in the CPU to refine the resources retained by the retaining unit to an accessible set of resources corresponding to the current operation mode, and to determine, when the input command is included in the set of commands corresponding to the current operation mode, whether a necessary resource to execute the input command is included or not in the accessible set of resources.
14. However, Ellison discloses a computer system including a CPU (column 5, line 57-column 6, line 13), the operating system having various rings, or operating modes and each ring is a logical division of hardware and software (column 3, lines 64-67). Ellison goes on to teach the processor verifying and loading a ring-0 nub software module into the isolated area of memory (column 4, lines 63-65). Keller and Ellison are analogous art because they are from the same field of endeavor, computer systems. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Keller and Ellison before him or her, to modify the system of

Keller to include the rings of Ellison. The suggestion/motivation for doing so would have been to protect the integrity of computer systems and increase trust of users (column 1, lines 21-24).

15. Referring to claims 18 and 29, Keller teaches that the input unit inputs an operation mode adding command for storing a new operation mode in the storing unit, and the execution unit makes the storing unit store the new operating mode (column 28, lines 6-10).

16. Referring to claims 20 and 31, Keller teaches a firmware acquiring command for acquiring a new firmware, and then acquiring that firmware (column 9, lines 35-39).

17. Referring to claims 24 and 35, Keller teaches:

h. An operation mode deleting unit that deletes a specified operation mode from the storing unit (column 36, lines 21-22).

i. A firmware deleting unit that deletes firmware corresponding to the operation mode deleted (column 36, lines 12-14).

18. Claims 21, 22, 32, and 33 are rejected under 35 USC 103 (a) as being obvious over Keller in view of Ellison and further in view of Bryon Nevis et al's US Patent 6,581,159. Referring to claims 22 and 33, Keller in view of Ellison discloses all the limitations of the parent claims. Keller in view of Ellison does not appear to explicitly disclose encrypting the firmware with a digital signature. However, Nevis discloses using digital signature techniques to validate the firmware (column 4, lines 28-30). Keller in view of Ellison and Nevis are analogous art because they are from the same field of



endeavor, of changing operating modes. At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Keller in view of Ellison and Nevis before him or her, to modify Keller in view of Ellison to include the encryption of Nevis. The motivation for doing so would have been that it is more secure and resistant to tampering (column 1, 26-27).

19. Referring to claims 21 and 32, the digital signature technique, as described in claims 22 and 33, is an encryption/decryption method, therefor claims 21 and 32 are also rejected. In addition, Nevis teaches that the firmware is encrypted (column 6, claim 7).

20. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Keller in view of Ellison, further in view of Mark Biondi's US Patent 6,622,246 and further in view of Brent Gregory et al's US Patent 5,748,488. Referring to claim 26, Keller in view of Ellison discloses all the limitations of the parent claim, as well as acquiring firmware (Keller, column 9, lines 35-39). Keller in view of Ellison does not appear to explicitly disclose loading logic circuit data instead of firmware. However, Biondi discloses using a logic circuit instead of firmware (column 6, lines 26-30). At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Keller in view of Ellison and Biondi before him or her, to modify the firmware acquiring of Keller in view of Ellison to include using a logic circuit instead of Biondi. The motivation for doing so is that any machine capable of performing the steps of the firmware could be used to replace it (column 6, lines 32-35).

21. Keller in view of Ellison in view of Biondi does not appear to disclose how to implement the logic circuit that is replacing the firmware. Gregory discloses that to generate a logic circuit all that is needed is the information on the signals (column 2, lines 28-30). Therefor instead of passing the actual firmware, as taught by Keller in view of Ellison, one would need to pass the data on the signals. Gregory goes on to disclose how to generate that logic circuit after receiving the appropriate information on the signals (column 2, lines 40-42). At the time of the invention, it would have been obvious to one of ordinary skill in the art, having the teachings of Keller, Ellison, Biondi and Gregory before him or her, to modify Keller in view of Ellison in view of Biondi to include generating the logic circuit of Gregory. Therefor it would have been obvious after modifying Keller in view of Ellison with Biondi to include how to implement the logic circuit mentioned as taught by Gregory.

***Allowable Subject Matter***

22. Claims 19, 25, 30 and 36 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

23. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cordelia Zecher whose telephone number is (571)272-7771. The examiner can normally be reached on Monday - Thursday 8:00 - 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on 571-272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. Z./  
Examiner, Art Unit 2432

/Gilberto Barron Jr./  
Supervisory Patent Examiner, Art Unit 2432